

Claims

What is claimed is:

1. An enclosed, regularly transportable, tote tank system for transporting and providing liquid cargo of significant capacity of at least about one hundred and fifty gallons of the industrial, heavy-duty type for transporting, for example, hazardous and flammable liquids by, for example, offshore/inshore vessels and trucks, as well as 5 other transportation means, providing relatively safe transportation of the liquids, comprising:
 - a rectangular, inner fluid containing tank member made up of –
 - a top, interior wall member,
 - two, interior, side wall members,
 - a bottom, interior wall member, and
 - two, interior end members, comparable to said interior side wall members but of a lesser width,
 - collectively together forming a first, interior, tank “skin” skin”capable of holding liquid, and
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- a comparable but slightly larger, outer, rectangular, enclosing, protective member, likewise made up of –
 - an exterior top wall member,
 - two, exterior, side wall members,

20 – an exterior, bottom wall member, and
 – two, exterior, end wall members, comparable to said side wall
members,

collectively together forming a second, exterior “skin,” substantially completely enclosing the interior, tank “skin” producing a double wall tank structure,

25 – with the respective members of the two, tank “skins” being generally separated by gaps, except at their respective bottom members, which are in face-to-face engagement, being flat one on top of the other with no spacing between them.

2. The portable tote tank of **Claim 1**, wherein:

the respective gapped wall members are separated from each other by a gap of about a half ($\frac{1}{2}$ ") inch.

3. The portable tote tank of **Claim 1**, wherein there is further included:

a set of off-set braces of rectangular, extended tubular construction are included between the opposed, interior and exterior wall members, restricted to only said top wall members and said side walls and said end wall members, connecting 5 their respective, opposed ones together while also maintaining the gaps between them.

4. The portable tote tank of **Claim 1**, wherein:

said second, exterior "skin" has on its top at least one fill opening through which the tank may be filled, and has a maximum height of about four (4') feet, with its other, lateral, length & width dimensions being comparable to or greater than said height, providing the portable tote tank with a stable, low profile and also allowing a worker to service the portable tote tank while standing on the same surface as that on which the portable tote tank is being supported.

5. The portable tote tank of **Claim 4**, wherein the tote tank has a capacity of about five hundred and fifty gallons, and wherein:

the tank is about six (6') foot in length from end to end and has a width of about four (4') feet from side to side.

6. The portable tote tank of **Claim 4**, wherein:

said second, exterior "skin" has a maximum height of no more than four feet, three inches (4' 3").

7. The portable tote tank of **Claim 1**, wherein the tote tank can be filled with liquid, and wherein there is further included:

at least one fill opening extending through both of said top wall members down to the interior of the tank and, with an openable fill cap, also extending above 5 said top wall member of said outer "skin," said fill opening being usable for introducing liquids into said tank interior and, when desired, filling the tote tank; and

a continuous, encircling wall extending up from the top wall member completely surrounding said fill opening, said encircling wall containing and preventing the uncontrolled escape of liquid that might be spilled during the filling operation through said fill opening.

8. The portable tote tank of **Claim 7**, wherein there is further included:

a liquid level gauge measuring the amount of liquid in the tote tank located adjacent to but laterally spaced from said fill opening and in juxtaposition to one side of the tote tank, said encircling wall initially forming most of a circle but 5 then having a radially, laterally extended extension in which area said liquid level guage is located at least in part, while said fill opening is located in the area defined by the circle part of said encircling wall.

9. The portable tote tank of **Claim 8**, wherein:

 said encircling wall extends up above said top wall member at least as high as said fill opening with said cap and said liquid level gauge and any other upwardly extending devices located within said encircling wall, protecting said fill
5 opening and cap and said gauge and said other devices from being snagged by lifting lines, slings and the like.

10. The portable tote tank of **Claim 1**, wherein:

 said encircling wall extends up above said top wall member about three to four (~3–4") inches.

11. The portable tote tank of **Claim 1**, wherein there is further included:

 a drain pipe line extending to the interior area defined by said encircling wall located in the gap between said inner and outer top wall members and extending laterally across to the closest side of the tote tank and being accessible from the side
5 of the tote tank, said drain pipe line being usable for draining out any spilled liquid entrapped within the area defined by said encircling wall.

12. The portable tote tank of **Claim 1**, wherein there is further included:
- a discharge valve and associated line located at the bottom of the tote tank enclosed within a closed off compartment within the confines of the outer walls of the tote tank; and
- 5 a lock-able but open-able door being an exterior part of said compartment for gaining access to said discharge line from the exterior of the tank for removing liquid from the interior of the tote tank.
13. The portable tote tank of **Claim 12**, wherein:
- said bottom wall members are downwardly sloped toward said compartment; and
- wherein there is further included a drip catch pan forming the bottom of
- 5 said compartment capable of catching and holding any liquid dripping down from the discharge line and any exterior coupling that might be attached to said discharge line.
14. The portable tote tank of **Claim 1**, wherein:
- said bottom wall members form a single sheet of material having a thickness greater than any one of the thicknesses of the other of said wall members.
15. The portable tote tank of **Claim 1**, wherein:
- all of said wall members are made of stainless steel.

16. An enclosed, regularly transportable, tote tank system for transporting and providing liquid cargo of significant capacity of at least about one hundred and fifty gallons of the industrial, heavy-duty type for transporting, for example, hazardous and flammable liquids by, for example, offshore/inshore vessels and trucks, as well as 5 other transportation means, providing relatively safe transportation of the liquids, comprising:

- a rectangular, inner fluid containing tank member made up of –
 - a top, interior wall member,
 - two, interior, side wall members,
 - a bottom, interior wall member, and
 - two, interior end members, comparable to said interior side wall members but of a lesser width,
- collectively together forming a first, interior, tank “skin” capable of holding liquid, and
- 15 – a comparable but slightly larger, outer, rectangular, enclosing member, likewise made up of –
 - an exterior top wall member,
 - two, exterior, side wall members,
 - an exterior, bottom wall member, and
 - two, exterior, end wall members, comparable to said side wall members,
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collectively together forming a second, exterior "skin," substantially completely enclosing the interior, tank "skin" producing a double wall tank structure, with the respective side, end and top wall members of the two, tank "skins" being generally
25 separated by gaps, the respective gapped wall members being separated from each other by a gap of about a half ($\frac{1}{2}$ ") inch, said second, exterior "skin" has on its top at least one fill opening through which the tank may be filled, and has a maximum height of about four (4') feet, with its other, lateral, length & width dimensions being comparable to or greater than said height, providing the portable tote tank with a
30 stable, low profile and also allowing a worker to service the portable tote tank while standing on the same surface as that on which the portable tote tank is being supported.

17. The portable tote tank of **Claim 16**, wherein the tote tank has a capacity of about five hundred and fifty gallons, and wherein:

the tank is about six (6') foot in length from end to end and has a width of about four (4') feet from side to side.

18 The portable tote tank of **Claim 16**, wherein the tote tank can be filled with liquid, and wherein there is further included:

at least one fill opening extending through both of said top wall members down to the interior of the tank and, with an openable fill cap, also extending above

5 said top wall member of said outer "skin," said fill opening being usable for introducing liquids into said tank interior and, when desired, filling the tote tank; and

a continuous, encircling wall extending up from the top wall member completely surrounding said fill opening, said encircling wall containing and preventing the uncontrolled escape of liquid that might be spilled during the filling operation through said fill opening.

19. The portable tote tank of **Claim 18**, wherein:

said encircling wall extends up above said top wall member at least as high as said fill opening and any other upwardly extending devices located within said encircling wall, protecting said fill opening and cap and said gauge and said 5 other devices from being snagged by lifting lines, slings and the like.

20. The portable tote tank of **Claim 16**, wherein there is further included:

a discharge valve and associated line located at the bottom of the tote tank enclosed within a closed off compartment located within the confines of the outer side and end wall members of the tote tank; and

10 a lock-able but open-able door being an exterior part of said compartment for gaining access to said discharge line from the exterior of the tank for removing liquid from the interior of the tote tank.

21. The portable tote tank of **Claim 16**, wherein:

 said bottom wall members are downwardly sloped toward said compartment; and

 wherein there is further included a drip catch pan forming the bottom of
5 said compartment capable of catching and holding any liquid dripping down from the
 discharge line and any exterior coupling that might be attached to said discharge line.

22. The portable tote tank of **Claim 16**, wherein:

 all of said wall members are made of stainless steel.

23. The portable tote tank of **Claim 16**, wherein there is further included:

 a suction pressure, dual relief valve included extending out of said outer
 tank “skin” and extending into the inner tank “skin” keeping the internal tank
 pressure below about a one and a half (1.5 psi) pounds per square inch suction and
 about a five (5 psi) per square inch output pressure.